

Title (en)  
RECOMBINANT EXPRESSION VECTOR ELEMENTS (REVES) FOR ENHANCING EXPRESSION OF RECOMBINANT PROTEINS IN HOST CELLS

Title (de)  
RECOMBINANT EXPRESSION VECTOR ELEMENTS (REVES) ZUR VERBESSERUNG DER EXPRESSION VON REKOMBINANTEN PROTEINEN IN WIRTSZELLEN

Title (fr)  
ELEMENTS DE VECTEURS D'EXPRESSION RECOMBINANTS (REVE) DESTINES A AUGMENTER L'EXPRESSION DE PROTEINES RECOMBINANTES DANS DES CELLULES HOTES

Publication  
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Application  
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Abstract (en)  
[origin: US2008241883A1] Compositions and methods comprising recombinant expression vector elements (rEVes) to enhance the level of expression of recombinant proteins are described. Other compositions and methods for lowering, substantially suppressing, or essentially silencing expression of a recombinant protein are also described.

IPC 8 full level  
**C12N 15/85** (2006.01)

CPC (source: EP KR US)  
**C07K 16/00** (2013.01 - EP US); **C07K 16/241** (2013.01 - EP US); **C07K 16/244** (2013.01 - EP US); **C07K 16/2854** (2013.01 - EP US);  
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**C12P 21/02** (2013.01 - EP US); **C12N 2510/02** (2013.01 - EP US); **C12N 2830/46** (2013.01 - EP US)

Citation (search report)  
• [A] WO 2004033693 A1 20040422 - XOMA TECHNOLOGY LTD, et al  
• [X] KIM JONG-MOOK ET AL: "Improved recombinant gene expression in CHO cells using matrix attachment regions", JOURNAL OF BIOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL LNKD- DOI:10.1016/J.JBIOTEC.2003.09.015, vol. 107, no. 2, 22 January 2004 (2004-01-22), pages 95 - 105, XP002458354, ISSN: 0168-1656  
• [A] ZAHN-ZABAL M ET AL: "Development of stable cell lines for production or regulated expression using matrix attachment regions", JOURNAL OF BIOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL LNKD- DOI:10.1016/S0168-1656(00)00423-5, vol. 87, no. 1, 27 April 2001 (2001-04-27), pages 29 - 42, XP004231294, ISSN: 0168-1656  
• [A] YOSHINORI KATAKURA ET AL: "Productivity enhancement of recombinant protein in CHO cells via specific promoter activation by oncogenes", CYTOTECHNOLOGY, KLUWER ACADEMIC PUBLISHERS, DO LNKD- DOI:10.1023/A:1008048928053, vol. 31, no. 1-2, 1 September 1999 (1999-09-01), pages 103 - 109, XP019236654, ISSN: 1573-0778  
• [A] LUCAS B K ET AL: "High-level production of recombinant proteins in CHO cells using a dicistronic DHFR intron expression vector", NUCLEIC ACIDS RESEARCH, OXFORD UNIVERSITY PRESS, SURREY, GB LNKD- DOI:10.1093/NAR/24.9.1774, vol. 24, no. 9, 1 May 1996 (1996-05-01), pages 1774 - 1779, XP002981239, ISSN: 0305-1048  
• [A] LEE S K ET AL: "Development of apoptosis-resistant dihydrofolate reductase-deficient Chinese hamster ovary cell line", BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US LNKD- DOI:10.1002/BIT.10633, vol. 82, no. 7, 30 June 2003 (2003-06-30), pages 872 - 876, XP002326421, ISSN: 0006-3592  
• [T] BARNES L M ET AL: "Mammalian cell factories for efficient and stable protein expression", CURRENT OPINION IN BIOTECHNOLOGY, LONDON, GB LNKD- DOI:10.1016/J.COPBIO.2006.06.005, vol. 17, no. 4, 1 August 2006 (2006-08-01), pages 381 - 386, XP024962792, ISSN: 0958-1669, [retrieved on 20060801]  
• [T] KWAKS T H J ET AL: "Employing epigenetics to augment the expression of therapeutic proteins in mammalian cells", TRENDS IN BIOTECHNOLOGY, ELSEVIER PUBLICATIONS, CAMBRIDGE, GB LNKD- DOI:10.1016/J.TIBTECH.2006.01.007, vol. 24, no. 3, 1 March 2006 (2006-03-01), pages 137 - 142, XP025052307, ISSN: 0167-7799, [retrieved on 20060301]  
• [T] JIANG ZHOU ET AL: "Regulation of recombinant monoclonal antibody production in Chinese hamster ovary cells: A comparative study of gene copy number, mRNA level, and protein expression", BIOTECHNOLOGY PROGRESS, AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, US LNKD- DOI:10.1021/BP0501524, vol. 22, no. 1, 1 January 2006 (2006-01-01), pages 313 - 318, XP002521023, ISSN: 8756-7938, [retrieved on 20051115]  
• [T] HARRAGHY NIAMH ET AL: "Sustained Transgene Expression Using MAR Elements", CURRENT GENE THERAPY, vol. 8, no. 5, October 2008 (2008-10-01), pages 353 - 366, XP008128011, ISSN: 1566-5232  
• See references of WO 2008121324A2

Citation (examination)  
V CHIZHIKOV ET AL: "A four-nucleotide translation enhancer in the 39-terminal consensus sequence of the nonpolyadenylated mRNAs of rotavirus", RNA, 1 June 2000 (2000-06-01), NEW YORK, pages 814 - 825, XP055100176, Retrieved from the Internet <URL:<http://rnajournal.cshlp.org/content/6/6/814.full.pdf>> [retrieved on 20140204], DOI: 10.1017/s1355838200992264

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)  
BA MK RS

DOCDB simple family (publication)  
**US 2008241883 A1 20081002; US 7935808 B2 20110503**; AU 2008233196 A1 20081009; AU 2008233196 B2 20111013;  
BR PI0809361 A2 20140902; CA 2681581 A1 20081009; CN 101652379 A 20100217; CN 101652379 B 20140514; EP 2142560 A2 20100113;  
EP 2142560 A4 20101201; IL 201231 A0 20100531; JP 2010523082 A 20100715; JP 2014012014 A 20140123; JP 5432117 B2 20140305;  
KR 20100014724 A 20100210; KR 20140001229 A 20140106; MX 2009010492 A 20091019; NZ 580378 A 20121130;

RU 2009140146 A 20110510; RU 2518340 C2 20140610; SG 182953 A1 20120830; TW 200907059 A 20090216; US 2011201053 A1 20110818;  
US 8410259 B2 20130402; WO 2008121324 A2 20081009; WO 2008121324 A3 20081211; ZA 200906433 B 20140326

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KR 20137015533 A 20080328; MX 2009010492 A 20080328; NZ 58037808 A 20080328; RU 2009140146 A 20080328;  
SG 2012046504 A 20080328; TW 97111615 A 20080328; US 2008004063 W 20080328; US 201113098337 A 20110429;  
ZA 200906433 A 20090915